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1. Real Party in Interest

The real party in interest is International Business Machines Corporation, the assignee of the entire right, title, and interest in and to the subject application by virtue of an assignment of record.

2. Related Appeals and Interferences

None.

3. Status of Claims

Claims 1-20 are pending, stand rejected, and are under appeal.

A copy of the Claims as pending is presented in the Appendix.

4. Status of Amendments

Claims 1, 15 and 20 were amended by the Amendment Under 37 C.F.R. §1.111 filed August 9, 2004. This Amendment was entered.

Claims 1, 9, 15, 18 and 20 were amended by the Amendment Under 37 C.F.R. §1.111 filed October 28, 2005. This Amendment was entered.

Claims 1, 15 and 20 were amended by the Amendment Under 37 C.F.R. §1.111 filed March 14, 2006. This Amendment was entered.

5. Summary of Claimed Subject Matter

The present invention relates to systems and methods for providing product information to a portable display device according to a position and orientation of the portable display device. The position and orientation of the portable display device is tracked within a local reference frame. Product information is provided to the portable display device according to the position and orientation of the portable display device within the local reference frame.

Referring to Claim 1; a method is claimed for providing product information. The method includes establishing a local reference frame which defines a space including a product identifier corresponding to the product information and a portable display device, wherein the space is three dimensional, as described, for example, at page 7, lines 19-20 and page 12, lines 17-20, and in Figures 1, element 1010 and Figure 8, element 8800. The method includes receiving a request for product information corresponding to the product identifier from the portable display device as described at, for example, page 9 line 20 to page 10 line 2, and in Figure 5 element 5030 and Figure 6 element 6030 and determining a position and an orientation in the three dimensional space of the portable display device in relation to the local reference frame, as described at, for example, paragraph page 12, lines 17-20, and

Figure 6, element 6020. The method includes requesting via the portable display device the product information, wherein the product identifier corresponding to the product information is selected according to the position and the orientation in the three dimensional space of the portable display device in relation to the local reference frame, as described at, for example, page 10, lines 20-24 and page 13, lines 3-8, and in Figure 6, element 6030 and providing the product information via the portable display device, as described at, for example, page 10, lines 18-21 and page 13, lines 3-7, and in Figure 6, element 6050.

Referring to Claim 15; a system is claimed for providing a user access to information. The system includes a portable display device within a local reference frame including an object, wherein the local reference frame is a three dimensional space, as described, for example, at page 7, lines 18-20, and in Figure 1, element 1050. The system claims a plurality of positional sensors, as described at page 12, lines 7-17 and page 13, lines 13-17, and in Figure 1, elements 2010-2060 and Figure 3, elements 3020-3040. The system further includes a user selectable trigger of the portable display device for triggering a correlation means, the correlation means for determining the object according to a known position of the object within the three dimensional space, and a position and an orientation of

the portable display device within the three dimensional space, as described at page 13, lines 1-8, and in Figure 5, element 5020. The system a database for providing, via the portable display device, information corresponding to the object, as described at, for example, page 10, lines 3-13, and in Figure 1, element 2090 and Figure 5, element 5040.

Referring to Claim 20; Claim 20 includes substantially the limitations of Claim 1. References to the specification therefore include the references given for Claim 1. Claim 20 is embodied in a program storage device readable by machine, for example, as described at page 9, lines 13-16, and Figure 4.

6. Grounds of Rejection to be Reviewed on Appeal

A. Claims 1, 15 and 20 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Herrod et al. (U.S. Patent No. 6,405,049) in view of Bertis (U.S. Patent No. 6,542,824).

7. Argument

A. **The Claim Rejections Under 35 U.S.C. 103 Are Legally Deficient.**

In rejecting claims under 35 U.S.C. §103, the Examiner bears the initial burden of presenting a *prima facie* case of obviousness. In re Rijckaert, 9 F.3d 1531, 1532 (Fed. Cir. 1993). The burden of presenting a *prima facie* case of

obviousness is only satisfied by showing some objective teaching in the prior art or that knowledge generally available to one of ordinary skill in the art would lead that individual to combine the relevant teachings of the references. In re Fine, 837 F.2d 1071, 1074 (Fed. Cir. 1988). A *prima facie* case of obviousness is established when the teachings of the prior art itself would appear to have suggested the claimed subject matter to one of ordinary skill in the art. In re Bell, 991 F.2d 781, 782 (Fed. Cir. 1993). If the Examiner fails to establish a *prima facie* case, the rejection is improper and must be overturned. In re Rijckaert, 9 F.3d at 1532 (citing In re Fine, 837 F.2d at 1074).

i. Claims 1, 15 and 20

It is respectfully submitted that at the very least, the combined teachings of Herrod and Bertis are legally deficient to establish a *prima facie* case of obviousness against independent Claims 1, 15 and 20.

Claims 1 and 20 claim, *inter alia*, "requesting via the portable display device the product information, wherein the product identifier corresponding to the product information is selected according to the position and the orientation in the three dimensional space of the portable display device in relation to the local reference frame." Claim 15 claims, *inter alia*, "a user selectable trigger of the portable display device for triggering a correlation means, the correlation means for

determining the object according to a known position of the object within the three dimensional space, and a position and an orientation of the portable display device within the three dimensional space."

Herrod teaches a terminal and access point for transmitting information concerning products available in the locality of the terminal for display (see col. 10, lines 36-44). Herrod teaches information is provided based on push technology according to a position of a device (see col. 10, lines 36-44) or based on user requests for product information using menu screens (see col. 11, lines 51-53). Herrod's push technology does not use a request via the device, nor a trigger of the device. Further, the user requests of Herrod do not use position or orientation in determining a product; Herrod teaches that a product is selected entirely through typing a name or selecting a product from a menu. Thus, Herrod fails to teach or suggest "requesting via the portable display device the product information, wherein the product identifier corresponding to the product information is selected according to the position and the orientation in the three dimensional space of the portable display device" as claimed in Claims 1 and 20, nor, "a user selectable trigger of the portable display device for triggering a correlation means, the correlation means for determining the object according to a known position of the object within the three dimensional space,

and a position and an orientation of the portable display device within the three dimensional space" as claimed in Claim 15. Therefore, Herrod fails to teach or suggest all the limitations of Claims 1, 15 and 20.

Berstis teaches an inertial motion sensor (see Abstract). Berstis does not teach "requesting via the portable display device the product information, wherein the product identifier corresponding to the product information is selected according to the position and the orientation in the three dimensional space of the portable display device" as claimed in Claims 1 and 20, nor, "a user selectable trigger of the portable display device for triggering a correlation means, the correlation means for determining the object according to a known position of the object within the three dimensional space, and a position and an orientation of the portable display device within the three dimensional space" as claimed in Claim 15. Berstis' inertial motion sensor is implemented in a GPS device for aiding positioning software. Berstis' inertial motion sensor does not include facilities for requesting via the portable display device the product information, nor a user selectable trigger of a portable display device for triggering a correlation means, much less selecting product information according to position and orientation of a portable display device in a three dimensional space, essentially as claimed. Therefore, Berstis

fails to cure the deficiencies of Herrod.

The combined teachings of Herrod and Berstis teach information pushing based on a position of a device and user selections of product information via menu screens. The combined teachings of Herrod and Berstis fail to teach or suggest all the limitations of Claims 1, 15 and 20; in particular requesting product information based on a position and orientation of a portable device.

Claims 1, 15 and 20 are believed to be allowable for additional reasons.

Claims 1 and 20 claim, *inter alia*, "a local reference frame which defines a space..., wherein the space is three dimensional," and Claim 15 claims, *inter alia*, "a local reference frame is a three dimensional space."

Herrod teaches a two-dimensional space, for example, see Figure 7 showing a two-dimensional map of a grocery. Nowhere does Herrod teach or suggest a three-dimensional local reference frame including a product or object, essentially as claimed in Claims 1, 15 and 20.

Berstis teaches positional information of a device determined based on a stored position and inertial motion sensors for tracking motion (see Summary of the Invention). The system of Berstis uses inertial motion sensors for determining position - clearly no local reference frame is implemented here.

Indeed, the Berstis system is designed to operate in the absence of a location reference frame. Thus, Berstis fails to cure the deficiencies of Herrod.


Claims 2-14 depend from Claim 1. Claims 16-19 depend from Claim 15. The dependent claims are believed to be allowable for at least the reasons given for the respective independent claims.

Accordingly, the rejection of Claims 1-20 should be overruled.

B. CONCLUSION

The claimed invention is not disclosed or suggested by the teachings of the applied prior art references, either alone or in combination. Moreover, the Examiner has failed to establish a case of anticipation of the presently claimed method under 35 U.S.C. §103 over Herrod in view of Berstis with respect to Claims 1, 15 and 20 for at least the reasons noted above. Accordingly, it is respectfully requested that the Board overrule the rejections of Claims 1-20 under 35 U.S.C. §103.

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8. CLAIMS APPENDIX

1. A method for providing product information comprising the steps of:

establishing a local reference frame which defines a space including a product identifier corresponding to the product information and a portable display device, wherein the space is three dimensional;

receiving a request for product information corresponding to the product identifier from the portable display device;

determining a position and an orientation in the three dimensional space of the portable display device in relation to the local reference frame;

requesting via the portable display device the product information, wherein the product identifier corresponding to the product information is selected according to the position and the orientation in the three dimensional space of the portable display device in relation to the local reference frame; and

providing the product information via the portable display device.

2. The method of claim 1, further comprising the step receiving an order for a product corresponding to the product identifier from the portable display device.

3. The method of claim 1, further comprising the step of receiving a bid for a product corresponding to the product identifier from the portable display device.

4. The method of claim 1, further comprising the step of adding a product corresponding to the product identifier to a user shopping list using the portable display device.

5. The method of claim 1, further comprising the step of providing a menu for distinguishing a plurality of products in the space via the portable display device.

6. The method of claim 1, further comprising the step of redirecting a user toward an alternative product using the portable display device.

7. The method of claim 1, further comprising the steps of:
determining the orientation of the portable display device;
and

selecting between the object and another proximate object on the basis of the orientation of the portable display device.

8. The method of claim 1, wherein the local reference frame is established using an active beacon.

9. The method of claim 8, further comprising the step of determining a position of the portable display device by comparing one of signal strengths of at least two beacons, a signal transmission time from each of at least two beacons, and an angle between at least two beacons, and the orientation is determined in three rotation angles.

10. The method of claim 1, wherein the local reference frame is established using passive environmental markings.

11. The method of claim 10, further comprising the step of determining a position of the portable display device relative to at least one environmental marking.

12. The method of claim 10, further comprising the step of determining a position of the portable display device relative to an angle between at least two environmental markings.

13. The method of claim 1, further comprising the step of retrieving the product information from a database stored in the portable display device.

14. The method of claim 1, wherein the local reference frame is established relative to the portable display device and moves with the portable display device.

15. A system for providing a user access to information comprising:

- a portable display device within a local reference frame including an object, wherein the local reference frame is a three dimensional space;

- a plurality of positional sensors;

- a user selectable trigger of the portable display device for triggering a correlation means, the correlation means for determining the object according to a known position of the object within the three dimensional space, and a position and an orientation of the portable display device within the three dimensional space; and

- a database for providing, via the portable display device, information corresponding to the object.

16. The system of claim 15, further comprising a plurality of active beacons defining the local reference frame, wherein the positional sensors are part of the portable display device.

17. The system of claim 15, wherein the correlation means determines the position of the portable display device based on a signal strength of at least one active beacon, wherein the signal strength is determined by the positional sensors.

18. The system of claim 15, where the correlation means determines the position of the portable display device is based on a signal transmission times from each of at least two active beacons, and the orientation is determined in three rotation angles.

19. The system of claim 15, further comprising a wireless communication link between the portable display device and a database of product information.

20. A program storage device readable by machine, tangibly embodying a program of instructions executable by the machine to perform method steps for providing product information, the method steps comprising:

establishing a local reference frame which defines a space including a product identifier corresponding to the product information and a portable display device, wherein the space is three dimensional;

receiving a request for product information corresponding to the product identifier from the portable display device;

determining a position and an orientation in the three dimensional space of the portable display device in relation to the local reference frame;

requesting via the portable display device the product information, wherein the product identifier corresponding to the product information is selected according to the position and the orientation in the three dimensional space of the portable display device in relation to the local reference frame; and

providing the product information via the portable display device.